

# Part 1

# Base Information

1. Project Title	Ward Road/BNSF Grade Separation
2. Project Start/End points or Geographic Area <i>Provide a map with submittal, as appropriate</i>	BNSF at-grade crossing of Ward Road approximately 1/2 mile north of the I-70/Ward Road interchange. Reconstruction of Ward Road is expected from 500' south to 700' north of the crossing. Reconstruction of the BNSF rail lines expected from 800 feet west to 1,200 feet east of the crossing.
3. Project Sponsor (entity that will construct/ complete and be financially responsible for the project)	Cities of Wheat Ridge and Arvada and Jefferson County
4. Project Contact Person, Title, Phone Number, and Email	Mark Westberg, Projects Supervisor, 303-235-2863, mwestberg@ci.wheatridge.co.us

5. Does this project touch CDOT Right-of-Way, involve a CDOT roadway, access RTD property, or request RTD involvement to operate service?  Yes  No  
*If yes, provide applicable concurrence documentation with submittal*

6. What planning document(s) identifies this project?

[DRCOG 2040 Fiscally Constrained Regional Transportation Plan \(2040 FC RTP\)](#)

Local plan:

Other(s):

*Provide link to document/s and referenced page number if possible, or provide documentation with submittal*

7. Identify the project's key elements.

<input type="checkbox"/> Rapid Transit Capacity (2040 FC RTP) <input type="checkbox"/> Transit Other: <input type="checkbox"/> Bicycle Facility <input checked="" type="checkbox"/> Pedestrian Facility <input checked="" type="checkbox"/> Safety Improvements <input type="checkbox"/> Roadway Capacity or Managed Lanes (2040 FC RTP) <input checked="" type="checkbox"/> Roadway Operational	<p>Grade Separation</p> <input type="checkbox"/> Roadway <input checked="" type="checkbox"/> Railway <input type="checkbox"/> Bicycle <input type="checkbox"/> Pedestrian <input type="checkbox"/> Roadway Pavement Reconstruction/Rehab <input type="checkbox"/> Bridge Replace/Reconstruct/Rehab <input checked="" type="checkbox"/> Study <input checked="" type="checkbox"/> Design <input type="checkbox"/> Other:
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8. **Problem Statement** What specific Metro Vision-related regional problem/issue will the transportation project address?

The existing at-grade BNSF rail crossing at Ward Road is causing considerable congestion along the corridor. BNSF uses the switch location and siding immediately west of Ward Road to drop rail cars. As a result, the freight train blocks Ward Road for prolonged periods of time causing congestion and delays for all modes of transportation. Because of the unpredictability of BNSF's rail schedule, people cannot plan for the delays in their schedule. By implementing a grade-separated crossing on Ward Road, all modes of transportation would benefit from improved travel-time reliability and reduced congestion along the corridor.

In addition to the delays caused by the railroad crossing, Ward Road is a rapidly developing DRCOG Urban Center. The Transit Oriented Development (TOD) on the north side of the track has become a multimodal hub. With the

introduction of the RTD G Line commuter rail to the Wheat Ridge-Ward Station, the area needs well-connected bicycle and pedestrian infrastructure to support First Mile/Last Mile trips to access the commuter rail line. Additionally, the south side of the tracks is a major employment center which includes the regional Kaiser Medical Office. The grade-separated crossing will enhance accessibility to key activity centers.

**9. Define the *scope* and *specific elements* of the project.**

The project will create a grade-separated rail crossing of Ward Road. The railroad tracks will be raised to create an above-grade crossing while Ward Road will be lowered to achieve clearance standards. The elements that are necessary to accomplish the grade separation include:

- 1) Reconstruction of Ward Road 700 feet north of the crossing including the intersection with Ridge Road to drop the road.
- 2) Reconstruction of Ward Road 500 feet south of the crossing including a commercial driveway that extends to the west to drop the road.
- 3) Reconstruction of the BNSF tracks 1,200 feet east of the crossing to just west of the Wheat Ridge-Ward Station to raise the tracks.
- 4) Reconstruction of the BNSF tracks, switch, and siding 800 feet west of the crossing to raise the tracks.
- 5) An additional travel lane in each direction within the project limits, including conversion of existing auxiliary lanes south of the project into travel lanes.
- 6) Sidewalks, separated either horizontally or vertically from the road, on both sides of the road.
- 7) A center median that prevents u-turns.
- 8) Street and pedestrian lights on both sides of the road.

**10. What is the status of the proposed project?**

Preliminary, high-level logistics have been considered by city staff, including the determination that Ward Road will need to be lowered in order to provide adequate clearances. The EA phase is scheduled to begin in FY 2022.

**11. Would a smaller federal funding amount than requested be acceptable, while maintaining the original intent of the project?**

Yes  No

*If yes, define smaller meaningful limits, size, service level, phases, or scopes, along with the cost for each.*

Only the environmental phase could be done for an estimated \$1 million.

## A. Project Financial Information and Funding Request

<b>1. Total Project Cost</b>		<b>\$2,000,000</b>
<b>2. Total amount of DRCOG Regional Share Funding Request</b> <i>(no greater than \$20 million and not to exceed 50% of the total project cost)</i>	<b>\$1,000,000</b>	<b>50%</b> of total project cost
<b>3. Outside Funding Partners (other than DRCOG Regional Share funds)</b> List each funding partner and contribution amount.	<b>\$\$</b> <b>Contribution Amount</b>	<b>% of Contribution</b> <b>to Overall Total</b> <b>Project Cost</b>
Subregional	\$600,000	30%
Jefferson County	\$50,000	3%
Cities of Wheat Ridge & Arvada	\$350,000	18%
	\$	0%
	\$	0%

	\$	0%
<b>Total amount of funding provided by other funding partners</b> <i>(private, local, state, Subregion, or federal)</i>	<b>\$1,000,000</b>	

<b>Funding Breakdown (year by year)*</b>	<i>*The proposed funding plan is not guaranteed if the project is selected for funding. While DRCOG will do everything it can to accommodate the applicants' request, final funding will be assigned at DRCOG's discretion within fiscal constraint. Funding amounts must be provided in year of expenditure dollars using an inflation factor of 3% per year from 2018.</i>				
	FY 2020	FY 2021	FY 2022	FY 2023	Total
<b>Federal Funds</b>	\$	\$	\$500,000	\$500,000	<b>\$1,000,000</b>
<b>State Funds</b>	\$	\$	\$	\$	<b>\$0</b>
<b>Local Funds</b>	\$	\$	\$500,000	\$500,000	<b>\$1,000,000</b>
<b>Total Funding</b>	\$0	\$0	\$1,000,000	\$1,000,000	<b>\$2,000,000</b>
<b>4. Phase to be Initiated</b> <i>Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other</i>	Choose an item	Choose an item	ENV	Design	

**5. By checking this box**, the applicant's Chief Elected Official (Mayor or County Commission Chair) or City/County Manager for local governments or Agency Director or equivalent for others, has certified it allows this project request to be submitted for DRCOG-allocated funding and will follow all DRCOG policies and state and federal regulations when completing this project, if funded.



## Part 2 Evaluation Criteria, Questions, and Scoring

### A. Regional significance of proposed project

WEIGHT **40%**

Provide **qualitative and quantitative** (derived from Part 3 of the application) responses to the following questions on the regional significance of the proposed project.

1. Why is this project regionally important?

The 2040 DRCOG RTP identified the Ward Road railroad crossing as one of the 14 at-grade crossings in need of grade separation. Ward Road is a principal arterial that extends north from I-70 to the rapidly developing western Arvada area. Ward Road is a critical part of the Wheat Ridge, Arvada, and Jefferson County street network because it provides access to key activity centers and important infrastructure investments within the region, including the RTD G Line. The G Line provides commuter rail access to downtown Denver, Denver International Airport, and other important regional destination. The direct connection to I-70 provides the best route from western Arvada to the mountains, the greater DRCOG region, and beyond.

2. Does the proposed project cross and/or benefit multiple **municipalities**? If yes, which ones and how?

The project will be beneficial to the City of Wheat Ridge, the City of Arvada, and Jefferson County. The grade-separated crossing will be located on the border of Wheat Ridge and Jefferson County. As a result, both jurisdictions will benefit from reduced congestion on the corridor and improved accessibility to I-70 and activity centers on Ward Road. The project will also enhance accessibility to Arvada which could result in more economic development opportunities and improved connectivity to the greater Denver region. For this reason, the City of Arvada recognizes the grade-separated crossing on Ward Road as a regionally significant project and has agreed to be a funding partner on the project.

Adding sidewalks on Ward Road will create multimodal connections to regionally significant activity centers, including the TOD north of the tracks and the Kaiser Medical Office.

3. Does the proposed project cross and/or benefit another **subregion(s)**? If yes, which ones and how?

The project improves the connection between the Jefferson subregion and I-70. The connection results in direct, improved access to and from the Denver and Adams subregions via I-70/I-76. The project also improves access to the G Line which connects the entire DRCOG region.

4. How will the proposed project address the specific transportation problem described in the **Problem Statement** (as submitted in Part 1, #8)?

Implementing a grade-separated crossing on Ward Road will eliminate the prolonged congestion caused by freight trains. As a result, travel time reliability and accessibility to key activity centers will be improved. Currently, the at-grade railroad crossing causes heavy congestion to build up when the freight train is blocking traffic for prolonged period during switching operations. To avoid delays, drivers will choose to take an alternate route causing additional congestion on other streets in the area. The grade-separated crossing will alleviate traffic on the alternate streets by eliminating the delays caused by the train and increasing the capacity of Ward Road.

Closing sidewalk gaps on Ward Road will provide ADA compliant, well-connected multimodal infrastructure along the corridor. The mobility enhancements will connect the activity centers on either side of the tracks.

5. One foundation of a sustainable and resilient economy is physical infrastructure and transportation. How will the **completed** project allow people and businesses to thrive and prosper?

The project will encourage additional patronage to the nearby businesses by reducing the prolonged congestion that occurs at the crossing. Reducing congestion within the project limits will reduce the cut-through traffic that

currently occurs in the residential neighborhood on the east side of Ward Road. As a result, the perceived safety and attractiveness of the residential neighborhood will improve.

The addition of ADA compliant multimodal facilities within the project area that close the existing gaps will encourage healthy behavior by giving direct access to both bicyclist and pedestrians between the Kaiser medical offices, the various businesses near the project area, the TOD area, and the new G Line station.

Additionally, according to the National Association of City Transportation Officials (NACTO), enhanced multimodal facilities can result in higher retail sales and increased property values. For this reason, multimodal transportation is a strategic investment of taxpayer money that will improve the economic vitality of the community.

**6. How will connectivity to different travel modes be improved by the proposed project?**

The grade-separated crossing will improve access and connectivity between all modes of transportation. The project will enhance access to transit by providing a direct connection for pedestrians, bicyclists, and motorists to access the new Wheat Ridge-Ward Station. Providing a convenient, easy to access route to the G Line will allow people to connect with downtown Denver, Denver International Airport, and other important regional destinations.

The addition of ADA compliant multimodal facilities within the project area close the existing gaps in the network. Enhanced connectivity will encourage walking and biking between the Kaiser medical offices, the various businesses near the project area, the TOD area, and new G line station.

Reduced congestion on Ward Road will also improved access to I-70. I-70 allows motorists to connect with bus routes and active transportation facilities which will provide additional multimodal opportunities.

**7. Describe funding and/or project partnerships (*other subregions, regional agencies, municipalities, private, etc.*) established in association with this project.**

The City of Wheat Ridge, the City of Arvada, and Jefferson County are partners on the project. The project area is located on the border of Jefferson County and the City of Wheat Ridge. Jefferson County has jurisdiction over the west side of the project area while the City of Wheat Ridge has jurisdiction over the east side. Jefferson County has committed \$50,000 towards the local match for this project.

Western Arvada is a rapidly developing community. The City of Arvada recognizes the importance of connecting western Arvada to major activity centers in the Denver area. For this reason, Arvada recognizes the grade-separated crossing on Ward Road to be a regionally significant project. The City of Arvada and the City of Wheat Ridge have pledged to cover the remaining \$350,000 of local match funding.

The City of Wheat Ridge is entering an Intergovernmental Agreement (IGA) with the City of Arvada and Jefferson County to solidify the partnership for major transportation projects throughout the TOD area including the grade-separated crossing at Ward Road.

CDOT and the RTD are also participating in the collaborative design process. CDOT, RTD, and BNSF will be added as official project partners as the project moves forward.

**B. DRCOG Board-approved Metro Vision TIP Focus Areas**

WEIGHT **30%**

*Provide **qualitative and quantitative** (derived from Part 3 of the application) responses to the following questions on how the proposed project addresses the three DRCOG Board-approved Focus Areas (in bold).*

**1. Describe how the project will improve mobility infrastructure and services for vulnerable populations (including improved transportation access to health services).**

The addition of the ADA compliant sidewalks along Ward Road will greatly improve multimodal access to activity centers within the project area.

There are also six health facilities within one-mile of the of the project area. The proposed improvements provide direct multimodal access to the two facilities that are adjacent to Ward Road. In addition, the Kaiser Medical Office, a regional health facility, is located on Ward Road just south of the project area.

The vulnerable populations within the project area will benefit from improved pedestrian connectivity and enhanced access to the commuter rail. The TAZs within 1-mile of the project area have the following total vulnerable populations:

1. Persons over age 65 - 2,214
2. Minority persons - 151
3. Low-Income Households - 927
4. Linguistically-challenged persons - 653
5. Individuals with disabilities - 1,888
6. Households without a motor vehicle - 444
7. Children ages 6-17 - 2,311

**2. Describe how the project will increase reliability of existing multimodal transportation network.**

Reducing congestion will improve the on-time performance of the bus route that connects to the new Wheat Ridge-Ward Station. A grade-separated crossing will also reduce the lag time buses have to spend stopping before they cross the tracks. The time savings from reduced congestion and lag time can be used to increase the span or frequency of transit service. The addition of the detached concrete sidewalks will enable people across all spectrums of age, ability, and socioeconomic status to access affordable and reliable transportation options.

Currently, dirt pathways and attached sidewalks are the only bicycle and pedestrian infrastructure in the project area. The pathways get muddy after rain and snow storms causing the pathways to be inaccessible. Additionally, the paths and sidewalk are inaccessible during the winter because they get covered with plowed snow. Implementing detached, concrete sidewalk will provide a weather-resistant multimodal transportation option that will be accessible in any weather condition.

**3. Describe how the project will improve transportation safety and security.**

Reducing congestion would reduce the number of rear-end collisions by reducing stop and go traffic. The addition of the medians will prevent illegal left- and u-turns within the project area. There were nine collisions in the project area over the past 5-years.

The addition of the street and pedestrian lights will increase the perceived comfort and safety of walking and bicycling in the project area at night.

Additionally, a grade-separated crossing would eliminate collisions with the freight train and other modes of transportation in the project area. According to the Federal Railroad Administration, there were 2,105 crossing collisions nationwide in 2017. Crossing collisions are more likely to result in serious injuries and fatalities than other types of traffic collisions.

**C. Consistency & Contributions to Transportation-focused Metro Vision Objectives**

WEIGHT **20%**

Provide **qualitative and quantitative** responses (derived from Part 3 of the application) to the following items on how the proposed project contributes to Transportation-focused Objectives (in bold) in the adopted Metro Vision plan. Refer to the expanded Metro Vision Objective by clicking on links.

[MV objective 2](#)

**Contain urban development in locations designated for urban growth and services.**

1. Will this project help focus and facilitate future growth in locations where urban-level infrastructure already exists or areas where plans for infrastructure and service expansion are in place?

Yes  No

Describe, *including supporting quantitative analysis*

This project is located near the end of the line station for the G Line. The TOD area surrounding the G Line station is a DRCOG Urban Center. Improving the capacity, streetscape, and multimodal facilities along Ward Road is part of the city's multi-pronged approach to encourage development within the Urban Center.

The western portion of the Urban Center area was rezoned to Mixed-Use TOD to encourage dense, transit-oriented development. The eastern portion of the urban center was rezoned to Mixed-Use TOD on the south and Mixed-Use Neighborhood on the north. These mixed-use zonings allow higher density development, reduce parking requirements, and encourage the development of vibrant urban communities.

At this time, over 450 units of higher density housing is in process for approval.

[MV objective 3](#)

**Increase housing and employment in urban centers.**

2. Will this project help establish a network of clear and direct multimodal connections within and between urban centers, or other key destinations?

Yes  No

Describe, *including supporting quantitative analysis*

With the opening of the G Line for service, several redevelopment projects have been initiated within the Urban Center. Two townhome developments are undergoing entitlements adjacent to the station with a total of 257 units. In addition, a multistory apartment building with 200 units is also being planned just east of the station within the Urban Center. This is evidence of the market's reaction to the opening of the G Line.

The City is also branding the TOD area as "Base Camp" in an attempt to attract more light industry and outdoor recreation industry employment opportunities to the area. Closing the gap in the multimodal facilities along Ward Road is critical in making the area more attractive to employers.

Improving access to the new G Line station provides multimodal access to the other Urban Centers, including Ralson Fields and Olde Town Arvada, to the east. The G Line will also allow people to connect with downtown Denver, Denver International Airport, and other important regional destinations.

The grade-separated crossing will provide additional connections and access to western Arvada, a rapidly developing community.

[MV objective 4](#)

**Improve or expand the region's multimodal transportation system, services, and connections.**

3. Will this project help increase mobility choices within and beyond the region for people, goods, or services?

Yes  No

Describe, *including supporting quantitative analysis*

Closing the gap in the sidewalks along Ward Road will provide more direct access from the properties south of the crossing to the new G Line station. This makes walking or biking to and from the station viable for the properties on the south side of the tracks. The G Line then provides access to downtown Denver, the Denver International Airport, and other important regional destinations with the DROCG region.

Completing the sidewalk network along Ward Road will provide direct access to economic centers on both sides of the tracks while providing pedestrian connections to the G Line. The sidewalks address First Mile/Last Mile barriers in the area by providing an accessible route for pedestrians and bicyclists to travel from the new G Line station to their final destinations. The G Line then provides access to downtown Denver, the Denver International Airport, and other important regional destinations with the DROCG region.

Reduced congestion on Ward Road will also improve access to I-70. I-70 allows motorists to connect with bus routes and active transportation facilities which will provide additional multimodal opportunities.

[MV objective 6a](#)

**Improve air quality and reduce greenhouse gas emissions.**

4. Will this project help reduce ground-level ozone, greenhouse gas emissions, carbon monoxide, particulate matter, or other air pollutants?

Yes  No

Describe, *including supporting quantitative analysis*

Reducing the prolonged congestion at the crossing that is caused by BNSF's operations will incrementally help to improve all aspects of air quality.

Improving the multimodal facilities at the crossing will also make the use of the commuter rail and other alternative modes of transportation more attractive. Encouraging mode changes will reduce the amount of vehicles on the road which will, in turn, improve air quality.

[MV objective 7b](#)

**Connect people to natural resource or recreational areas.**

5. Will this project help complete missing links in the regional trail and greenways network or improve other multimodal connections that increase accessibility to our region's open space assets?

Yes  No

Describe, *including supporting quantitative analysis*

The multimodal connection the project provides will enhance connections to outdoor recreation. Filling in the sidewalk gaps will improve multimodal access to a planned recreation facility at the northeast corner of the I-70/Ward Road interchange. Additionally, the improved regional connections to the G Line, I-70, and Arvada will provide access to regional recreational areas and natural resources.

[MV objective 10](#)

**Increase access to amenities that support healthy, active choices.**

6. Will this project expand opportunities for residents to lead healthy and active lifestyles?

Yes  No

Describe, *including supporting quantitative analysis*

The enhanced multimodal facilities will encourage more people to walk, bike, and take transit which has been proven to reduce stress and help people maintain a healthy body weight. Additionally, the connections to recreational facilities provide hiking, sports, and other activities.

The project will also enhance accessibility to medical facilities, government services, and academic institutions.

[MV objective 13](#)

**Improve access to opportunity.**

7. Will this project help reduce critical health, education, income, and opportunity disparities by promoting reliable transportation connections to key destinations and other amenities?

Yes  No

Describe, *including supporting quantitative analysis*

The proposed sidewalks will provide ADA compliant, multimodal connections to the new G Line station. The G Line provides access to downtown Denver, the Denver International Airport, and other important regional destinations. The G Line station, Wheat Ridge-Ward Station, is less than 1/4 mile east of the project area.



Additionally, by providing opportunities for people to walk, bike, or take transit, the project will help solve mobility barriers within the community by providing affordable and accessible transportation options for people who do not own a car and/or are unable to drive.

The project will also enhance accessibility to medical facilities, government services, and academic institutions by connecting Ward Road with regional activity centers like the downtown areas of Arvada and Denver.

**MV objective 14**    **Improve the region’s competitive position.**

8. Will this project help support and contribute to the growth of the region’s economic health and vitality?     Yes     No

*Describe, including supporting quantitative analysis*

In 2016, a \$33 million ballot initiative to redevelop three key areas within the city was approved. The ballot initiative demonstrates Wheat Ridge’s commitment to economic development by showing the investment the city is making to build major economic activity centers within the city. Keeping Wheat Ridge economically healthy and vital helps boost the entire DRCOG region since Wheat Ridge serves as the gateway into the Metro area from the west along I-70.

The project will also maximize the regional investment in infrastructure. The region has invested millions of dollars on the commuter rail and improving other major transportation facilities near the project. Funding the grade-separated crossing would help other transportation infrastructure projects become more accessible and efficient.

Finally, as a multi-jurisdictional project, the grade-separated crossing will benefit Wheat Ridge, Arvada, and Jefferson County.

**D. Project Leveraging**

**WEIGHT 10%**

9. What percent of outside funding sources (non-DRCOG-allocated Regional Share funding) does this project have?	20%	80%+ outside funding sources ..... High 60-79% .....Medium 59% and below .....Low
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### Part 3

## Project Data Worksheet – Calculations and Estimates

(Complete all subsections applicable to the project)

### A. Transit Use

1. Current ridership weekday boardings	480
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	20,137	12,129	32,266
2040	23,794	13,072	36,866

Transit Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional daily transit boardings after project is completed. (Using 50% growth above year of opening for 2040 value, unless justified) <i>Provide supporting documentation as part of application submittal</i>	48	96
4. Enter number of the additional transit boardings (from #3 above) that were previously using a different transit route. (Example: <b>{#3 X 25%}</b> or other percent, if justified)	0	0
5. Enter number of the new transit boardings (from #3 above) that were previously using other non-SOV modes (walk, bicycle, HOV, etc.) (Example: <b>{#3 X 25%}</b> or other percent, if justified)	0	0
6. = Number of SOV one-way trips reduced per day (#3 – #4 – #5)	48	96
7. Enter the value of <b>{#6 x 9 miles}</b> . (= the VMT reduced per day) (Values other than the default 9 miles must be justified by sponsor; e.g., 15 miles for regional service or 6 miles for local service)	432	864
8. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	410	820
9. If values would be distinctly greater for weekends, describe the magnitude of difference:  Transit ridership is generally less on weekends across all of RTD's service types and individual routes. The proposed project will not impact ridership on the G Line.		
10. If different values other than the suggested are used, please explain here: Route 72L (Quaker via Ward Limited) had approximately 480 daily riders in 2016 (representing the latest information available) for the entire route. Much of this ridership boards at the Ward Road Park-n-Ride at I-70 and Ward Road. This Route also serves the area along Ward Road in Wheat Ridge. The route provides five eastbound trips in the morning that serve the project area along Ward Road (of a total of ten, with the remainder of trips beginning at the Ward Road Park-n-Ride), and eight trips in the evening that serve the project area along Ward Road (of a total of ten trips).  According to the RTD Gold Line Final Environmental Impact Statement, nearly 20 percent of the RTD G Line daily line boardings are expected to occur at the Wheat Ridge-Ward end-of-line station. Route 72L is planned to be eliminated with the introduction of G Line commuter rail. A new Route 125 is proposed to replace Route 72L to operate between the Federal Center Station and 64 <sup>th</sup> and Quaker. Service would operate via Red Rocks College, Indiana Street, Colfax Avenue, NREL, Youngfield Street, Ward Road, the Wheat Ridge-Ward Station, and 64 <sup>th</sup> Avenue. Service would operate on weekdays only, every 30 minutes during peak periods. Service would also operate hourly between Red Rocks College and 64 <sup>th</sup> and Quaker during mid-day hours.		

The grade separation of Ward Road over the BNSF rail line is expected to increase the number of transit boardings that the local route experiences along Ward Road in the opening year and in 2040, as it is expected to improve its on-time performance measures, which is important for transit riders.

## B. Bicycle Use

1. Current weekday bicyclists	20
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	20,137	12,129	32,266
2040	23,794	13,072	36,866

Bicycle Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional weekday one-way bicycle trips on the facility after project is completed.	12	20
4. Enter number of the bicycle trips (in #3 above) that will be diverting from a different bicycling route. (Example: <b>{#3 X 50%}</b> or other percent, if justified)	6	10
5. = Initial number of new bicycle trips from project (#3 – #4)	6	10
6. Enter number of the new trips produced (from #5 above) that are replacing an SOV trip. (Example: <b>{#5 X 30%}</b> (or other percent, if justified)	2	3
7. = Number of SOV trips reduced per day (#5 - #6)	4	7
8. Enter the value of <b>{#7 x 2 miles}</b> . (= the VMT reduced per day) (Values other than 2 miles must be justified by sponsor)	1	3
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	0	2
10. If values would be distinctly greater for weekends, describe the magnitude of difference:  Values are expected to be similar on weekends. A slight increase would be likely on weekends as there is a greater number of recreational cyclists on weekends.		
11. If different values other than the suggested are used, please explain here:  No data is currently available for bicycle counts within one mile of project. There is an on-street bike lane on 52 <sup>nd</sup> Avenue west of Ward Road that extends to McIntyre Street. However, there are no connections on 52 <sup>nd</sup> Avenue to the east of Ward Road, and there are gaps in the sidewalks on both sides of Ward Road between 49 <sup>th</sup> Place and 52 <sup>nd</sup> Avenue. Ward Road is proposed to have on-street bike lanes on the west side and a sidewalk with an amenity zone on the east side in numerous city plans. This project proposes to add an 8-foot sidewalk with a 6-foot amenity zone on the east side of the road and would reconstruct the existing attached sidewalk on the west side of Ward Road.  CDOT has several bicycle count locations around the state. In their 2017 Pedestrian Count Summary, there were bicycle counts that were as low as 30-40 per day. This project conservatively assumed 20 bicycles per day along		

Ward Road as the basis for #1. With the opening of the G Line, proposed bike/pedestrian facilities along Ward Road, and the grade separation of Ward Road over the BNSF rail line, there are expected to be a greater number of bicycle riders in the area, assumed at approximately a 50 percent increase over existing for opening year and a 100 percent increase by 2040.

### C. Pedestrian Use

1. Current weekday pedestrians (include users of all non-pedaled devices)	20
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	20,137	12,129	32,266
2040	23,794	13,072	36,866

Pedestrian Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional weekday pedestrian one-way trips on the facility after project is completed	12	20
4. Enter number of the new pedestrian trips (in #3 above) that will be diverting from a different walking route (Example: <b>{#3 X 50%}</b> or other percent, if justified)	6	10
5. = Number of new trips from project (#3 – #4)	6	10
6. Enter number of the new trips produced (from #5 above) that are replacing an SOV trip. (Example: <b>{#5 X 30%}</b> or other percent, if justified)	2	3
7. = Number of SOV trips reduced per day (#5 - #6)	4	7
12. Enter the value of <b>{#7 x .4 miles}</b> . (= the VMT reduced per day) (Values other than .4 miles must be justified by sponsor)	1	3
8. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	0	2
9. If values would be distinctly greater for weekends, describe the magnitude of difference:  Values are expected to be similar on weekends.		
10. If different values other than the suggested are used, please explain here:  No data is currently available for pedestrian counts within one mile of project. However, CDOT has several Pedestrian Count locations around the state. In their 2017 Pedestrian Count Summary, two similar suburban locations along arterials saw approximately 20 pedestrians per day. This number was used as the basis for #1. With the opening of the G Line, proposed bike/pedestrian facility along Ward Road, and the grade separation of Ward Road over the BNSF rail line, there are expected to be a greater number of pedestrians in the area, assumed at approximately a 50 percent increase over existing for opening year and a 100 percent increase by 2040.		

### D. Vulnerable Populations

	Vulnerable Populations	Population within 1 mile
1.	Persons over age 65	2,214

Use Current Census Data	2. Minority persons	151
	3. Low-Income households	927
	4. Linguistically-challenged persons	653
	5. Individuals with disabilities	1,888
	6. Households without a motor vehicle	444
	7. Children ages 6-17	2,311
	8. Health service facilities served by project	14

### E. Travel Delay *(Operational and Congestion Reduction)*

Sponsor must use industry standard Highway Capacity Manual (HCM) based software programs and procedures as a basis to calculate estimated weekday travel delay benefits. *DRCOG staff may be able to use the Regional Travel Model to develop estimates for certain types of large-scale projects.*

1. Current ADT (average daily traffic volume) on applicable segments	34,300
2. 2040 ADT estimate	53,100
3. Current weekday vehicle hours of delay (VHD) (before project)	51

Travel Delay Calculations	Year of Opening
4. Enter calculated future weekday VHD (after project)	0
5. Enter value of <b>{#3 - #4} = Reduced VHD</b>	51
6. Enter value of <b>{#5 X 1.4} = Reduced person hours of delay</b> <i>(Value higher than 1.4 due to high transit ridership must be justified by sponsor)</i>	71.4
7. <b>After project peak hour congested average travel time reduction</b> per vehicle (includes persons, transit passengers, freight, and service equipment carried by vehicles). <i>If applicable, denote unique travel time reduction for certain types of vehicles</i>  Reduction of 5 mins (0.083hrs) travel time per vehicle	0
8. If values would be distinctly different for weekend days or special events, describe the magnitude of difference.  No difference	
9. If different values other than the suggested are used, please explain here:  N/A	

### F. Traffic Crash Reduction

1. Provide the current number of crashes involving motor vehicles, bicyclists, and pedestrians <i>(most recent 5-year period of data)</i>		Sponsor must use industry accepted crash reduction factors (CRF) or accident modification factor (AMF) practices <i>(e.g., NCHRP Project 17-25, NCHRP Report 617, or DiExSys methodology)</i> .
Fatal crashes	0	
Serious Injury crashes	0	
Other Injury crashes	3	
Property Damage Only crashes	9	
2. Estimated reduction in crashes <u>applicable to the project scope</u> <i>(per the five-year period used above)</i>		
Fatal crashes reduced	0	

<b>Serious Injury</b> crashes reduced	0	
<b>Other Injury</b> crashes reduced	2	
<b>Property Damage Only</b> crashes reduced	6	

## G. Facility Condition

Sponsor must use a current industry-accepted pavement condition method or system and calculate the average condition across all sections of pavement being replaced or modified.  
Applicants will rate as: Excellent, Good, Fair, or Poor

### Roadway Pavement

1. Current roadway pavement condition	Fair
2. Describe current pavement issues and how the project will address them.  Existing asphalt pavement has visible cracks and wear. The edge of the existing asphalt shoulders in locations are chipping.  As part of this project, Ward Road would be reconstructed 700' north of the crossing, including the intersection with Ridge Road. Ward Road would also be reconstructed 500' south of the crossing, including a commercial driveway that extends to the west.	
3. Average Daily User Volume	34,300

### Bicycle/Pedestrian/Other Facility

4. Current bicycle/pedestrian/other facility condition	Poor
5. Describe current condition issues and how the project will address them.  Northbound and Southbound on Ward Road south of railroad tracks, there are 5-foot sidewalks with non-ADA ramps at driveways. No sidewalks are present at the railroad crossing on either side of Ward Road. Northbound on Ward Road north of railroad tracks, there are no sidewalks present. Southbound on Ward Road north of the railroad tracks, there are 5-foot sidewalks with non-ADA ramps at driveways. No bike facilities are present on Ward Road in either direction. Bikes must merge into vehicular travel lanes to cross the railroad tracks.  With the proposed project, an 8-foot sidewalk with a 6-foot amenity zone will be constructed on the east side of the road. Any additional gaps in the existing attached sidewalk on the west side of the road would also be completed with the reconstruction of that sidewalk.	
6. Average Daily User Volume	40

## H. Bridge Improvements

1. Current bridge structural condition from CDOT N/A, there is no existing bridge structures at this location.	
2. Describe current condition issues and how the project will address them.  This project would implement a new grade separation of the BNSF rail line over Ward Road. This would help to reduce congestion due to existing railroad switching movements that add to the congestion on Ward Road due to the gates being down for prolonged periods while these train movements occur.	

3. Other functional obsolescence issues to be addressed by project N/A	
4. Average Daily User Volume over bridge	N/A
<b>I. Other Beneficial Variables</b> <i>(identified and calculated by the sponsor)</i>	
1.	
2.	
3.	
<b>J. Disbenefits or Negative Impacts</b> <i>(identified and calculated by the sponsor)</i>	
1. Increase in VMT? <i>If yes, describe scale of expected increase</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
No increase in VMT is expected as a result of the implementation of this project.	
2. Negative impact on vulnerable populations	No negative impacts on vulnerable populations would be expected as a result of the implementation of this project.
3. Other:	